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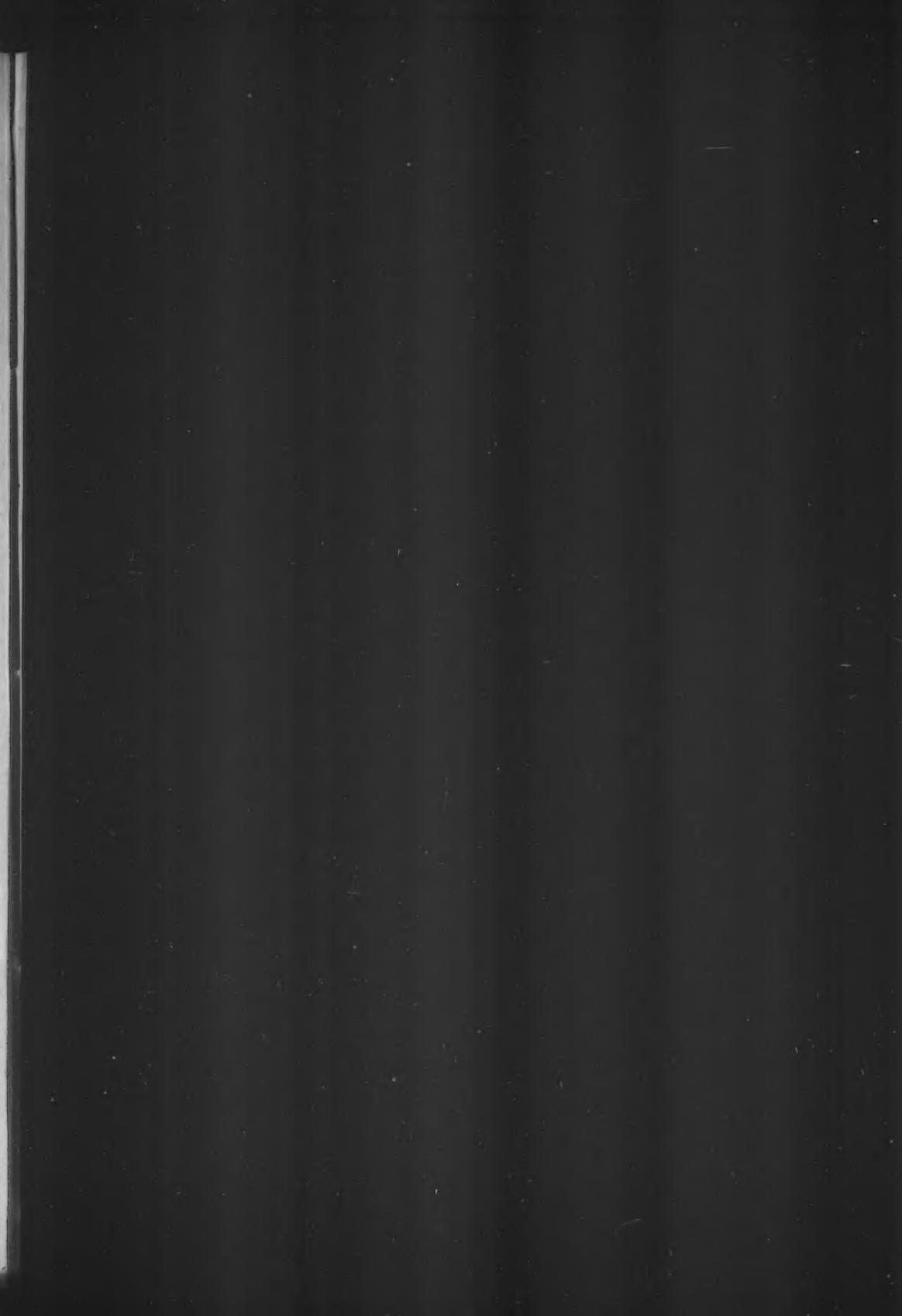
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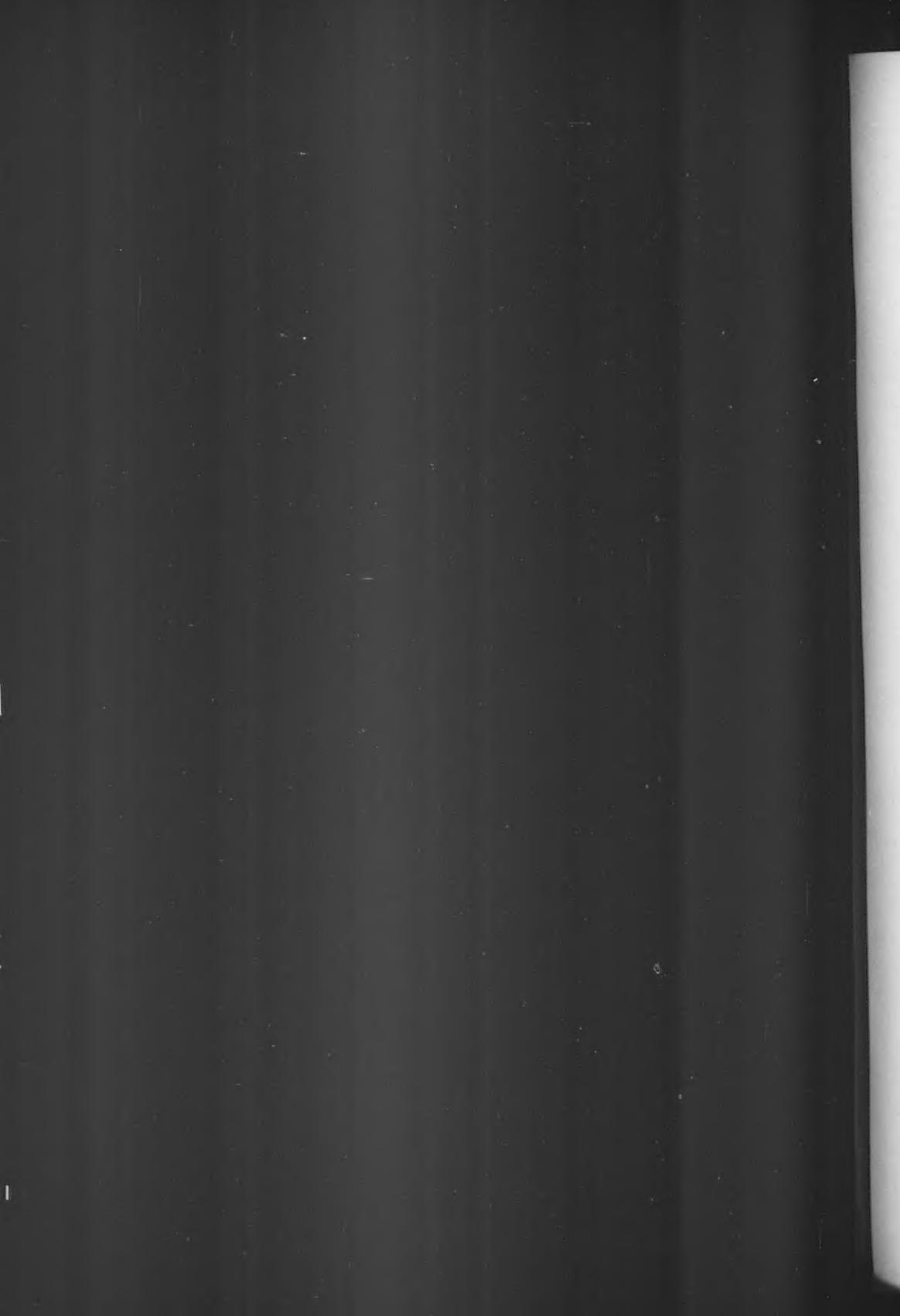
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THE PRESENT STATE OF THE ORNIS OF GUADALOUPÉ ISLAND

By JOHN E. THAYER and OUTRAM BANGS

IN the spring of 1906 Mr. W. W. Brown, Jr., accompanied by Mr. H. W. Marsden and Ignacio Orosco, made a collecting trip of two months—May 1 to June 28—in Guadalupe Island, gathering material for the Thayer Museum at Lancaster, Massachusetts.

We had planned to have Mr. Brown arrive in Guadalupe much earlier in the season than he did, but owing to the new marine law by which the Mexican Government prohibits all but vessels flying its own flag from visiting the island, his trip thither was long delayed. There are very few Mexican vessels to be had at any price, and to be on time to keep a prearranged appointment is apparently one of the least of the troubles of a Mexican skipper. When the party arrived at Guadalupe May 1, the breeding season of the rock wren, the kinglet, the house finch and the junco was passed, and the only eggs secured were those of the petrel and the flicker.

Since its ornis was first made known in 1875, through the work done there by Palmer, Guadalupe has many times been visited by good ornithologists, Bryant, Anthony, Streator and Beck all having made collections there. Much has already been published concerning it, probably the best description of the island and account of its birds being that of W. E. Bryant (Bull. Cal. Acad. Science, No. 6, 1887). We, however, feel that, even at the risk of what may seem useless repetition, a short description of the island is necessary, in order to make clear the distribution of the birds found there by Brown and Marsden. Furthermore as this is taken from Brown's carefully prepared notes, without it we could scarcely show the changes that are taking place and the present condition of the biota of the island, facts certainly worth recording, especially when it is generally known with what alarming rapidity the destruction of that highly interesting endemic biota, due to the introduction of goats and cats, is taking place. Already many

plants and three birds are gone and others are reduced to very small numbers, and the whole island seems threatened in the near future with absolute desolation—doomed to become a barren rock.

GUADALOUPÉ ISLAND

Guadalupe Island, the northern end of which lies about 160 miles southwest from San Antonio point, Lower California, is about 20 miles long and from 3 to 7 miles wide. It is of volcanic origin, and is traversed throughout its entire length by a chain of mountains, the highest of which is some 4500 feet above sea level. The western and northern sides of this range slope rapidly toward the ocean, ending in many places in high perpendicular cliffs. Toward the south the slope is more gradual and ends less abruptly. The southern part of the island, which is lowest, is rocky and barren, and during May and June, 1906, was a sun-burned waste with hardly a leaf of living verdure.

At the northern end of the island extending along a narrow ridge, and in some places down its perpendicular face is a fast decaying pine wood. No young trees appear anywhere and the old ones are gradually falling, the ground being strewn with decaying trunks. This end of the island is of about 3000 feet altitude. Much of the time it is enveloped in heavy fog, and on such occasions a splendid example of the power in these trees of gathering and condensing moisture is afforded. Under the pines water will be pouring in streamlets from the base of the trunks, while the surrounding open country is hardly wet by the fog. Formerly when the whole northwestern part of the island was covered with a dense pine forest, springs must have been more numerous and conditions very different. Most of the higher parts of the island are open, rocky table land, but near the very highest point, north of Mt. Augusta, is a large cypress wood, occupying an area of nearly three square miles. The eastern edge of this large cypress grove ends abruptly at a ridge below which is another much lower table land. Upon this is a second but very much smaller grove of cypress with several springs and pools of water, more or less alkaline, near by. Here Brown and Marsden made their camp. Among the cypresses of both groves there are numerous dried stumps of some shrub now extinct in Guadalupe. No young trees could be found in or about the groves, and most of the old trees show the marks of the teeth of goats, and many are dying. Far down the northwestern slope there is a large grove of cabbage palms, and another smaller one near Steamer Point on the west shore. Among the palms are a few fine oaks, from 30 to 65 feet in height, and under a cliff east of the cabins several stunted ones that branch very low down like shrubs.

The juniper is gone; numerous dried stumps told, however, where in the past a grove of this tree had stood.

The vegetation of the island in May and June consisted of wild oats, foxtailed grass and cactus plants, and in the region of the old corrals, a species of *Malva* grew in profusion. Other plants, with very few exceptions, were seen only here and there clinging to the almost perpendicular cliffs.

The climate of the island, in spring and early summer at least, is cold and raw with much fog at the northern end. High winds, almost gales, blew from the northwest much of the time, making collecting along the north ridge well nigh impossible. On such days Brown and Marsden would resort to the large cypress grove on the high table land and once inside this wood no matter how hard it blew without, not a breath would be stirring, so perfect is the protection afforded by the closely growing cypress trees.

The domestic goat and cat turned loose upon the island many years ago, are

of course responsible for the destruction of its flora and ornis. Brown and Marsden estimated the numbers of the goat to be between six and eight thousand. It eats up every growing thing. All shrubs have long been exterminated and not a young tree, palm, oak, pine or cypress can be found in the island. The cat is also very numerous and undoubtedly has caused the extinction of two of the island's native birds—the towhee and the Guadalupe wren—while the rock wren, junco, flicker and petrel, suffer much from its depredations. The house mouse (*Mus musculus*) has become established in Guadalupe and is exceedingly abundant, but it probably does but little harm, while it undoubtedly furnishes the main diet of the burrowing owl and sparrow hawk.

Guadalupe is at present uninhabited by man.

LIST OF BIRDS SEEN OR TAKEN BY BROWN AND MARSDEN

Diomedea nigripes Aud. Seven specimens, adults of both sexes, were taken at sea near the island, on June 27 and 28.

Puffinus opisthomelas Coues. Three specimens were taken in June. Mr. Brown says of this shearwater—"this species was abundant at night about the perpendicular cliffs east of our cabins, on the lower tableland, their cries resounding throughout the night. At day they frequented the waters off the extreme northern end of the island. From the high cliffs they could be constantly seen skimming over the ocean 1,000 feet below; often there were from forty to fifty in sight at one time.

"Along the top of the bluffs we found the remains of three or four that had been killed by cats. The bird almost certainly breeds in the rocky crevices of the bluffs, but we could not prove this, as the perpendicular cliffs are inaccessible.

"On our return trip from Guadalupe shearwaters of this species were constantly in sight. Off the bar at San Quintin there were thousands upon thousands of them—I think I never before have seen so many birds at one time."

Puffinus griseus (Gmel.). Two specimens were taken at sea near Guadalupe in June.

Oceanodroma macrodactyla Bryant. A series of a dozen adults and three young in the down was taken between the dates of May 28 and June 17, and one egg May 28.

Mr. Brown's notes on this species are as follows: "This species was abundant at night about its nesting burrows on the pine ridge at the northern end of the island. Most of the burrows that we opened were empty, the breeding season being about over; three, however, contained one young one each, and one, one egg.

"The burrows were of various lengths and usually led between or under heavy fragments of rock, making it very difficult, in many cases impossible, to reach the end. We found no adult birds in the burrows. After the young are hatched the old birds appear to come in only at night to feed them. The one egg we secured was in a deserted burrow fifteen inches long, and lay in a somewhat enlarged depression at the end. It was white with a faint wreath of reddish brown specks at the larger end.

"The mortality among these birds from the depredations of the cats that overrun the island is appalling—wings and feathers lie scattered in every direction around the burrows along the top of the pine ridge. The species, however, is still breeding in large numbers in Guadalupe, and sometimes at night the air seemed to be fairly alive with petrels, their peculiar cries being heard on all sides."

Phalacrocorax sp. "Two cormorants were several times seen off the southern

end of the island. They were very shy and we were unable to secure either of them."

Buteo borealis calurus (Cass.). Three fine specimens taken by Brown and Marsden prove that the red-tailed hawk of Guadalupe is true *B. borealis calurus*.

Mr. Brown says of it: "A few pairs frequented the high pine woods of the north ridge. Although we searched very carefully we found no nests either in the pines or the cypresses and I think they must breed along the precipices."

Certhneis sparveria phalœna (Lesson). Fourteen skins, young and adults, May 13 to June 19. These do not differ from specimens from northern California and elsewhere on the mainland within the range of the subspecies.

Mr. Brown writes that the sparrow hawk is "tolerably common in Guadalupe and very shy. Its food consists chiefly of mice (*Mus musculus*) but it also catches and eats house finches, juncos and rock wrens. They nest along the cliffs. Young fully able to fly were about by June 10."

Heteractitis incanus (Gmel.). One male, in unspotted plumage, was taken May 5. It was alone on the beach near the landing, feeding among the rocks almost in the surf.

Crymophilus fulicarius (Linn.). One female, taken June 27. This is a late date upon which to find the red phalarope so far south, and the bird was probably a stray.

Larus occidentalis Aud. One adult female, taken May 4. Mr. Brown says "a flock of about ten individuals lived on and about the beach near the landing, and others were seen at the southern end of the island. I think they nest on the shelves of the perpendicular cliffs."

Ptychoramphus aleuticus (Pall.). One female was taken June 28. Mr. Brown's notes say of this species: "A few were constantly seen at sea off the southern end of the island, and on shore we found a number of dead ones rolled up above the surf."

Micruria hypoleuca (Xantus). Two females were taken at sea off Guadalupe June 27. One of these was moulting its primaries and was unable to fly.

Speotyto cunicularia hypogaea (Bp.). *Speotyto cunicularia becki* Rothschild and Hartert, Novit. Zool., Vol. IX, p. 405, July 1902: Guadalupe Island.

Twenty-seven specimens, young and adults, May 6 to June 17.

The burrowing owl of Guadalupe is absolutely indistinguishable in any way from the subspecies *hypogaea* of the mainland. Mr. E. W. Nelson also reached this conclusion several years ago, when he compared with mainland specimens, the large series from Guadalupe then in the collection of the California Academy of Sciences.

Mr. Brown's notes on the burrowing owl are as follows: "Very common in the high, open, rocky country of the tablelands, but not found in the pine or cypress woods. It is mostly nocturnal in its habits, though several times I saw it hunting grasshoppers during the day. We found several nests in holes among the rocks, all containing young nearly full grown. One nest in which there were five young birds, contained, besides, eighteen freshly killed mice and the remains of many others. While mice seem to be its chief diet, I found in the stomachs of some of the ones I skinned remains of beetles and grasshoppers. Its cry, which is not unpleasing, is always to be heard on dark nights mingled with the voices of petrels and shearwaters."

Colaptes rufipileus Ridg. A series of skins was secured on dates ranging from May 6 to June 19, and six sets of eggs May 8 to June 8.

This well-marked island form is in all probability doomed to speedy extinction,

and will be the next of the Guadalupe birds to go. Brown and Marsden found in all not more than forty individuals in the island. In the small cypress grove near the cabins there were four and in the large cypress woods about thirty-five.

Mr. Brown tells us that in the breeding season, at least, the species is wholly confined to the cypresses, none being seen in the pine woods. The bird is very tame and unsuspecting and falls an easy prey to the cats.

The six sets of eggs taken may be described as follows:

Set 1. May 8, 1906. Eggs fresh, in an old cypress stump, 4 feet from ground; altitude 4500 feet.

Set 2. May 18, one egg and three young.

Set 3. May 20, one egg, nest in a dead cypress 10 feet up, hole 18 inches deep, 4 inches wide.

Set 4. May 20. Four eggs, nest in an old cypress 5 feet from ground; altitude 3700 feet.

Set 5. May 24. Four eggs, nest in a cypress four feet from ground, hole 20 inches deep, $3\frac{1}{2}$ inches wide; altitude 4000 feet.

Set 6. June 8. Five eggs, nest in a cypress 15 feet from ground, hole 2 inches deep and 4 inches in diameter.

Trochilus anna (Less.)? Early in June Mr. Brown saw a hummingbird he felt sure belonged to this species. Early one morning after a severe northwest storm that had lasted for several days, the bird flew past him along the edge of the bluffs of the lower tableland and disappeared. It was the only hummingbird seen in the island.

Regulus calendula obscurus Ridg. A good series was secured on dates ranging from May 13 to June 11, most of those taken being males. Mr. Brown found the species restricted to the large cypress wood, and in small numbers, noting in all about thirty-five individuals. The breeding season was passed, as young on the wing were seen. The males, however, were still singing, and Mr. Brown characterizes the song as "indescribably sweet; in fact I have seldom heard its equal, and given as it always is in the silent gloomy depths of the cypress woods of Guadalupe, it is ever to be remembered."

Salpinctes obsoletus guadeloupensis Ridg. A large series was secured, on dates from May 1 to June 8.

Next to the house finch, the rock wren is the commonest bird of Guadalupe, and occurs all over the island from sea level to the highest peaks and in every kind of country, from the rocky beach, the cliffs, and the grassy plateau to the high wooded region. It is very tame and confiding, and Mr. Brown has several times, when standing or sitting still, had one hop onto his shoe or even upon his knee and look him over with evident curiosity.

Nests found as early as May 8 contained young. In the open country the nest is placed in crevices in the rocks and in the cypress woods in hollows in the decaying, prostrate cypress trees.

Sitta canadensis Linn. A suite of skins taken from May 13 to June 11, shows the resident breeding nuthatch of Guadalupe to be quite the same as the bird of continental North America generally.

It is very local in Guadalupe being confined to the pine woods of the north ridge. Mr. Brown thought about fifty individuals made their home in this desolate, wind-swept wood that is about 3000 feet above the sea and is almost constantly buried in fog. It was never seen in the cypresses or the palm woods. All the specimens taken were adult and no sign of nesting was observed.

Carpodacus amplus Ridg. A large series of specimens, including young and

adults, taken from May 1 to June 18. Many adult males in this series are in the yellow phase of plumage.

The house finch is by far the commonest bird of the island. Mr. Brown has sent us the following account of it: "On our arrival—May 1—well grown young were about with the old birds, and at that time the house finches were scattered about in large numbers all over the island. On the cliffs and about the rocks near the landing there were several hundred of them. Late in June they gathered in flocks and all left the lower altitudes, even those, some thirty or forty, that had been living about our cabins. Empty nests were found in a variety of situations, in the pines and cypresses, in cactus plants, and in crevices in the rocks. Their food seemed to consist chiefly of grass seeds and insects, but the birds that lived near our cabins were very partial to goat meat and made our meat-shed their headquarters."

Junco insularis Ridg. A large series, including young and adults, was taken from May 4 to June 18.

The Guadalupe junco, a very tame, confiding little bird, is fairly abundant throughout the island, though more numerous at high altitudes—in the cypress groves, the pine woods and among the oaks. A few, however, breed down even to sea level. One pair was feeding its young among the rocks on the beach at the landing.

At the time of Mr. Brown's arrival—May 1—full grown young were about. One nest only in which there were still young birds, four in number, was found. This was placed on a lower branch of a pine, was bulky and made mostly of dried grass stems.

BIRDS PROBABLY NOW EXTINCT

Polyborus lutosus Ridg. When Beck visited Guadalupe in 1900-1901 the Caracara still occurred in the island, though probably in small numbers. It appears now to be entirely extinct. During two months spent in Guadalupe by Brown and Marsden the island was ransacked from end to end, but no trace of the caracara could be found.

Goats were killed and left at various points on the island, especially upon the high, open tableland, where the caracaras, had there been any, must have detected them, but nothing came to any of the many carcasses that were thus exposed.

Thryomanes brevicaudus Ridg. Writing in *THE CONDOR* in May, 1901, A. W. Anthony gave it as his opinion that the Guadalupe wren was extinct. It undoubtedly is, Brown and Marsden hunting in vain every spot where it might possibly have survived.

Pipilo consobrinus Ridg. In the same article in which Anthony refers to the Guadalupe wren as "among those that were", he mentions the towhee, saying that it is "now nearly or quite extinct." Unfortunately there can no longer be any doubt of the complete extermination of this strongly characterized island species. If there had been a living individual, we feel sure it could not have escaped the close scrutiny of two such experienced field collectors as Brown and Marsden, who searched the whole island for two months, the towhee being one of the birds they especially sought.

Boston, Massachusetts.

SOME FALL MIGRATION NOTES FROM ARIZONA

By HARRY S. SWARTH

LAST September, in response to the cordial suggestion of Mr. James H. Ferriss, of Joliet, Illinois, that I accompany him on a trip to some of the mountain ranges of southern Arizona, I gladly availed myself of the opportunity, and so had an exceedingly enjoyable six weeks in the field. There were three of us in the party, Mr. Ferriss, Mr. L. E. Daniels of Laporte, Indiana, and myself. Mr. Ferriss and Mr. Daniels devoted themselves to land shells and ferns, while I, though most interested in birds, collected also what mammals, reptiles, and insects I could. Leaving Chicago the evening of September 18 we arrived at Benson, Arizona, early in the morning of Saturday, September 21. Saturday was taken up in the various necessary preparations, including arrangements for transportation; and early the next morning we started for the Rincon Mountains, some twenty-five miles to the northward, arriving at "Happy Valley" about dusk, after traveling all day over tiresomely rough, rocky roads. We were camped in a broad, but very rough and uneven valley, grown over with underbrush, and with but few large trees except along the bed of the main stream; intersected by countless deep-cut gullies running from the higher hills to the stream in the center of the valley. To reach the pine woods of the higher altitudes entailed an exceedingly arduous climb, one of such length as to render it hardly possible to return to camp the same day. The Rincons proved disappointing in respect to animal life. There was an abundance of vegetation, and plenty of water, but birds and mammals were remarkably scarce; so, after a week of hard labor, with but little to show for it, an opportunity presenting itself, we decided to return to Benson and make a fresh start. From there we went to the Huachuca Mountains, arriving on the evening of September 30. We intended to make but a short stay there, but, the mountains proving fruitful in snails and plants, as well as in birds, kept delaying our departure; and when my companions finally decided to move on to the Chiricahuas, on October 28, I thought it best to remain where I was for the brief remainder of the time at my disposal, and did so, starting for home on November 8. During most of the trip the weather was pleasant, except for one or two rainstorms, but toward the end of October the nights became quite cold, and the first week in November there was snow in the higher parts of the mountains.

My excuse for the following list is that it is, in a measure, supplemental to and rounds out my previously published account of the birds of the Huachuca Mountains (Pacific Coast Avifauna, No. 4, 1904). I kept track rather carefully of the migration that was in progress, and am consequently able to give dates of departure of many species. In a number of cases I have also given dates of arrival, as already published in the above mentioned paper, so as to have in one place a statement of the time when the species may be looked for in the region.

I had never collected here in the late fall before, and found much of interest in the movements of the birds, while in several instances I was obliged to revise my previous convictions as to the manner of occurrence of certain species. Thus I had always supposed *Corvus cryptoleucus* to be a resident in this region, as it certainly is not during the winter; while most surprising of all to me was the total absence of the Western Robin (*Planesticus migratorius propinquus*) from the Huachucas, where always before I had found it in abundance at all times from February to September. There was plenty of food, for the bushes were loaded with

berries of various kinds, but the Robins were gone, where, or why, it is hard to say.

Lophortyx gambeli. Gambel Partridge. From Benson to the foothills of the Rincon Mountains this species was seen in the greatest abundance. Though so common around Benson, it ranges in the valley of the San Pedro River hardly more than twenty miles or so south of that place, at least in any abundance.

Callipepla squamata. Scaled Partridge. None were seen in the Rincon Mountains, though the ground was of a character that should be suitable to the species. As we traveled south from Benson on the train many flocks of Scaled Quail were seen along the San Pedro River, while the Gambel Quail was no longer observed.

Cyrtonyx montezumæ mearnsi. Mearns Partridge. Abundant in the Huachucas, where they were seen from the base of the mountains (about 4,000 feet) up to the divide (about 9,000 feet). One flock was seen in the Rincon Mountains.

Columba fasciata. Band-tailed Pigeon. A small flock was seen in the Rincons September 22, the only ones observed in this region. In the Huachucas also, but few were seen, and they lessened in numbers during the whole of our stay, until by November 1 hardly one was to be found. An old bird was observed feeding a young one on October 12. Nearly all that were seen were unusually tame and unsuspecting.

Zenaidura macroura. Mourning Dove. During the winter months the Mourning Dove appears to leave this region almost entirely; for a few stray birds seen in the Rincons on various occasions, and one or two observed in the foothills of the Huachucas, were all that we came across.

Cathartes aura. Turkey Vulture. A good many were seen in the vicinity of Benson the latter part of September, but they had already disappeared from the Huachucas. Not one was seen during the whole of our stay in that range.

Circus hudsonius. Marsh Hawk. Several birds seen along the San Pedro River on November 8 were the only ones observed.

Accipiter velox. Sharp-shinned Hawk. Early in October this species was seen in considerable numbers, evidently migrating, for a few weeks later but few of the birds could be found.

Accipiter cooperi. Cooper Hawk. A few were seen in the Rincons, while in the Huachucas, during the first two weeks in October, they were exceedingly abundant. There were a great many chickens and pigeons on the ranch where we were staying, and during that time there was not a day on which at least one Cooper Hawk did not make an attempt on the poultry yard. Nearly all of these marauders were immature birds, and I did not see one succeed in carrying anything away with him, as they seemed to become confused at the uproar they invariably stirred up. They were so quick and unexpected in these attacks though, that not one was shot in the act. Toward the end of October their numbers were greatly lessened, and it was evident that nearly all had passed on further south.

Buteo borealis calurus. Western Red-tail. Quite common in the Huachucas from base to summit, and, as a rule, tame and unsuspecting. In the foothills they were frequently seen hunting the common "ground squirrel" of the region (*Citellus grammurus*). On the morning of October 21 a hawk made an exceedingly ill-advised and abortive attempt on the chicken yard, and his strange appearance made me start in pursuit. I secured the bird, and at the time was puzzled to know what it was, but it is evidently an immature *calurus* in exceedingly dark plumage. The whole bird is uniform dark brown, decidedly glossy on the back, and with most of the feathers of the lower parts edged with paler brown. The upper breast

is uniform with the rest, and does not form a lighter brown spot, as I have seen in some adults in this phase of plumage. There is no trace of red on the tail.

Buteo swainsoni. Swainson Hawk. While travelling west from Chicago a great many Swainson Hawks were seen from the car window on September 20, in eastern New Mexico and western Texas. They were observed at quite a high altitude, 5000 to 6000 feet, and the air was decidedly frosty; so it seemed the more strange to find that they had entirely left their summer home on the "Huachuca Plains" before we reached there. There was an abundance of food for them in the shape of grasshoppers, but the hawks had all gone.

Aquila chrysaetos. Golden Eagle. On October 26 I secured a fine old male Golden Eagle on the extreme summit of Carr Mountain, the second highest peak in the range. He had not quite finished his fall moult, a few old feathers remaining in the lesser wing coverts, and a few pin feathers on the dorsum, while an old tail feather showed that the immature plumage had not been worn during the previous year at any rate. Eagles were seen almost daily during our stay in the mountains, most frequently toward the top of the range. Several were observed in the Rincons.

Falco peregrinus anatum. Duck Hawk. On September 30, as I sat on the veranda of the hotel at Benson, waiting the arrival of the train, a Duck Hawk passed directly over me, not thirty yards distant, quite close enough for me to see that it was an old bird, from its size probably a female. This was the only one of the species seen on the trip.

Falco columbarius. Pigeon Hawk. A single bird in the beautiful blue plumage of the fully adult male was secured on October 30, on the open prairie below the Huachucas. Another, probably of the same species, was seen on October 24. The Pigeon Hawk appears to be of quite rare occurrence in the region, this being the only one I have secured. I have never seen *Falco richardsoni* at all, though it also certainly should occur.

Falco sparverius phalœna. Desert Sparrow Hawk. Not nearly as common as during the summer months. Seen in the foothills and out on the plains, but not high up in the mountains. A male bird secured on October 16 was still in the midst of the moult.

Syrnium occidentale. Spotted Owl. Heard calling on several occasions in the higher parts of the Huachucas. None were seen and no specimens secured.

Megascops asio cinereus Ridgway. Mexican Screech Owl. Screech Owls were frequently heard calling in the evenings around our camp in the Huachucas, sometimes three or four answering each other from different points in the woods. *Cinereus* is the common screech owl of this region, the *flammeolus* and *trichopsis* also occur, and it is very possible that more than one species contributed to these nightly concerts; there was variety enough of sound for a dozen. No specimens were secured. A few, but very few, were heard in the Rincons.

Bubo magellanicus pallescens. Western Horned Owl. Quite common in the Huachucas, frequently seen in the daytime, and heard calling almost every night. I was often directed to them by the blue jays, the commotion stirred up when the jays found an owl being audible a long ways from the center of the disturbance.

Speotyto cunicularia hypogaea. Burrowing Owl. One or two were seen in the colonies of prairie-dogs (*Cynomys arizonensis*), a few miles below the Huachucas.

Geococcyx californianus. Road-runner. Frequently seen in the foothills of the Huachucas. Most of the birds observed were singularly tame and unsuspicious.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Sparingly distributed

through the higher parts of the mountains, from about 6000 feet upwards. Not observed in the Rincons.

Dryobates scalaris bairdi. Texas Woodpecker. Fairly common in the foothill region of the Huachucas, while a few were seen in the Rincon Mountains also. They are less dependent on the presence of large timber than most of the woodpeckers, and may frequently be seen feeding in the "greasewood" and on the flat-leaved cactus (*Opuntia*), sometimes a long way from trees.

Dryobates arizonæ. Arizona Woodpecker. Fairly common in the live-oak region in the Huachucas, and seen also in the Rincons. A male bird secured in the latter place on September 27 has one or two faded brownish feathers on the upper part of the dorsum, remnants of the old plumage, while in another secured October 1 the outermost primary has not acquired its full length. The molting period thus extends over quite a long period of time, from the middle of July to the first of October.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. The first one seen, a female, was secured in the Rincon Mountains on September 27, several more being observed the following day. When we reached the Huachucas, October 1, the species was fairly abundant, and remained so the whole of our stay. It probably remains in the mountains throughout the winter.

Sphyrapicus thyroideus. Williamson Sapsucker. A single specimen, a female, taken in the Huachucas, at the head of Miller canyon, about 9000 feet on October 26, was the only one seen.

Melanerpes formicivorus aculeatus. Mearns Woodpecker. One of the most abundant species in the Rincons and in the live oak regions of the Huachucas. In a specimen taken on October 15 the exposed portion of the primaries is already beginning to fade to a dull brown.

Centurus uropygialis. Gila Woodpecker. A few were seen in the Rincons and in the foothills of the Huachucas, but it was not common in either place.

Colaptes cafer collaris. Red-shafted Flicker. By far the most abundant species of bird in the Rincon Mountains at the time of our visit. They were feeding on the wild grapes which grow in the greatest profusion in that region. Flickers were fairly abundant in the Huachucas also.

Phalaenoptilus nuttalli. Poor-will. The Poor-wills had nearly all left the mountains when we arrived, and only one or two were heard calling. A bird flushed on a rocky hillside near the base of the Huachucas on October 23 was the last one noted.

Aeronautes melanoleucus. White-throated Swift. This species was observed on only one or two occasions, but is probably apt to visit the mountains at any time in the winter, as it is unquestionably a resident in the warmer parts of the territory, not so very many miles away.

Trochilus alexandri. Black-chinned Hummingbird. A few hummingbirds, not over three or four all told, probably of this species, were seen in the Rincon Mountains during the last week in September. This identification is not positive, as all that were seen were females, and none were secured.

Selasphorus platycercus. Broad-tailed Hummingbird. Three or four were seen, or heard flying by, in the Huachucas, the last being observed on October 3. The earliest date on which I have noted the species in these mountains is February 28 (1903).

Tyrannus verticalis. Arkansas Kingbird. A few were observed in the Rincons during the last week in September, but by the time we reached the Huachucas they had already departed.

Sayornis nigricans. Black Phoebe. One or two observed in the vicinity of Benson, along the San Pedro River, were the only ones seen.

Sayornis saya. Say Phoebe. Fairly common, both in the Rincons and along the base of the Huachucas. They were in the latter locality when I left, November 8, and would doubtless remain there through the winter months.

Contopus richardsoni. Western Wood Pewee. The only one seen was a single bird noted near the base of the Huachucas on October 29, probably an unusually late date for the species in this region. My earliest record of a spring arrival in these mountains is May 4 (1903).

Empidonax difficilis. Western Flycatcher. An immature female was secured near the mouth of Miller Canyon, in the Huachucas, on October 1. It was the only individual of the species noted on the trip. My earliest spring record for the species is May 18 (1903).

Empidonax hammondi. Hammond Flycatcher. Two small flycatchers, an adult male and an immature male, were secured in the Huachucas, one at 5000 feet, the other at 5500 feet elevation, which, for the present, at any rate, I feel obliged to refer to this species. When I shot them I had no doubt that they were something else, and it is with considerable hesitation that I now refer them to *hammondi*. Through the courtesy of Mr. F. S. Daggett and Mr. Joseph Grinnell I was able to get together quite a series of this species, presenting several points of interest but containing nothing to duplicate my two birds. Two specimens collected by Mr. Daggett near Pasadena, California, during the same week in September, represent what are probably the extremes of what Mr. Ridgway designates as the "white-bellied" and the "yellow-bellied" phases of plumage. The first is an extremely light colored bird, grayish above and almost white below; the latter very dark colored, dark brownish olive above, breast buffy olive, and abdomen sulphur yellow. My two birds, absolutely alike in coloration, differ from both these, in that, above and below, they are decidedly greenish, with no trace of olive or olivaceous anywhere. The throat is gray; in sharp contrast to the rest of the underparts and the abdomen is yellow. Four specimens of *hammondi* taken in the Huachucas in September, 1895, are all more or less olivaceous on the back. It is possible that these two birds represent a hitherto undescribed species, but as the differences are all of color, there being apparently none of size or proportions, I hesitate to give them a name.

They were shot on November 2 and 4, making their appearance after a hard storm, no other *Empidonaces* having been seen for a month. They remained in the topmost branches of the live oaks, kept calling incessantly, and were extremely shy and hard to approach, in all these respects reminding me very much of the little *Ornithion imberbe* that is found in this region; and it was with a faint hope that they might belong to that species that I pursued them. The two were the only ones seen.

Empidonax griseus Brewster. Gray Flycatcher. An immature female taken at the base of the Huachucas on October 1 was the only one of the species observed.

Pyrocephalus rubineus mexicanus. Vermilion Flycatcher. An adult male seen in the foothills of the Rincon Mountains on September 22 was the only one observed during the trip.

Otocoris alpestris adusta. Scorched Horned Lark.

Otocoris alpestris occidentalis. Montezuma Horned Lark. Horned Larks were quite abundant on parts of the plains below the Huachuca Mountains, but very irregular in their distribution, there being large areas apparently well adapted to their needs where they could not be found at all. Some of the specimens

secured are typical *adusta* while others are referable to *occidentalis*. Both varieties were secured from the same flock, and they were apparently in about equal numbers.

Cyanocitta stelleri diademata. Long-crested Jay. In the Rincon Mountains but few of this species were observed, but in the Huachucas they were very abundant, as usual. They had quite completed their moult by October 1, and were in bright, fresh plumage.

Aphelocoma woodhousei. Woodhouse Jay. This species proved to be fairly abundant in the Rincon Mountains, but, as I have always found them in this region, shy and retiring, and very hard to approach. They seem to prefer rough, broken country, with plenty of thick underbrush, and are seldom seen in the larger timber. In the Huachucas their call note could occasionally be heard from high up on some brushy hillside, but they kept out of sight, and it was quite by accident that a quick snap shot brought down a specimen on the last day of my stay in the mountains.

Aphelocoma sieberi arizonæ. Arizona Jay. Quite abundant in the Rincon Mountains, and, in the Huachucas, very numerous and exceedingly noisy, as usual. Probably the most conspicuous species of bird in either range.

Corvus corax sinuatus. American Raven. One or two Ravens were seen flying overhead in the Huachucas.

Corvus cryptoleucus. White-necked Raven. I had always supposed this species to be a permanent resident in the vicinity of the Huachucas, but such apparently is not the case. A few were observed lingering in the foothill region and out on the plains, during the first week in October, but they gradually disappeared, and by the middle of the month were all gone. None were seen in the Rincons.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. One or two Yellow-headed Blackbirds were seen near the San Pedro River, about twelve miles from the Huachucas, on the afternoon of September 30.

Agelaius phoeniceus subsp.? Red-winged Blackbird. Some large flocks of Red-winged Blackbirds were seen at the same place as the last mentioned species on November 8, but I was unable to get any specimens. On a previous visit to this region I took breeding specimens of *A. ph. neutralis* at a spot twenty miles further down the river, so it is possible the birds seen were of that variety.

Sturnella magna hoopesi. Mexican Meadowlark.

Sturnella neglecta. Western Meadowlark. There were a few Meadowlarks in some fields below the Huachucas, but, as I have always found them in this region, they were extremely shy and hard to approach. They were feeding in fields of tall grass, waist high or higher, flushing generally at from fifty to sixty yards. After much tramping and futile burning of powder, I succeeded in landing six specimens, five of which appear to be *Sturnella neglecta*, the other a male example of *S. magna hoopesi*.

Icterus parisorum. Scott Oriole. While driving from Benson to the Rincon Mountains on September 22, numerous small flocks of Scott Orioles were observed passing overhead, evidently migrating, most of those seen appearing to be high plumaged males. None were noted in the Rincons, but when we reached the Huachucas there were a few still lingering in the foothill region, the last being observed on October 9. It is rather singular that in the late summer this species seems to disappear from the mountains for a time, as in previous visits to the Huachucas I saw none during the latter part of July or in August, though they breed commonly enough. My earliest spring record for this region is March 31 (1903).

Euphagus cyanocephalus. Brewer Blackbird. About the middle of October

many flocks were seen, evidently migrating, flying in a southerly direction along the base of the Huachucas.

Carpodacus cassini. Cassin Purple Finch. Arrived in the Huachucas on November 5, when I secured an adult male at the summit of the range. My latest date for this species in the spring is May 11 (1903).

Carpodacus mexicanus frontalis. House Finch. Seen on several occasions near the mouth of Miller Canyon, in October. In my experience it is not a common species in this region at any time.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Not seen in the Rincons, but fairly common in the foothill region of the Huachucas early in October. They disappeared before the end of the month.

Spinus pinus. Pine Siskin. Fairly common in the pine region of the Huachucas, from 8,500 feet upwards, during the whole of our stay. Not observed in the Rincons.

Passer domesticus. House Sparrow. A number of "English" Sparrows were observed in the streets of the town of Benson. The last time I visited the town, in June, 1903, they had not yet reached it.

Calcarius ornatus. Chestnut-collared Longspur. An abundant migrant on the plains below the Huachucas. All through the month of October they were observed passing overhead, flock after flock, but comparatively few were seen to alight.

Poecetes gramineus confinis. Western Vesper Sparrow. Quite common on the plains below the Huachucas but not seen elsewhere.

Passerculus sandwichensis alaudinus. Western Savanna Sparrow. There were one or two fields near the base of the Huachucas, where the ranchers had attempted to raise grain, and in these enclosures I found a number of Savanna Sparrows. They were not seen elsewhere.

Centronyx bairdi. Baird Sparrow. I had previously found this species quite abundant in the plains below the Huachucas in the spring of the year, but on this occasion, after much careful search and hard tramping, I was able to secure but two specimens, both taken on October 24, one an immature male, the other a high plumaged old female.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Fairly common in the foothills of the Huachucas during October. *Zonotrichia leucophrys*, in my experience more abundant than *gambeli* in this region in the spring, was not seen at all.

Spizella socialis arizonæ. Western Chipping Sparrow. Exceedingly abundant, both in the Rincons and in the foothill region of the Huachucas.

Spizella breweri. Brewer Sparrow. A single specimen was secured on the Huachuca Plains on October 28.

Junco oreganus shufeldti. Shufeldt Junco. Arrived in the Huachucas on October 18, and became fairly abundant a few days later. But very few adult males were seen.

Junco mearnsi. Pink-sided Junco. Not at all abundant; first seen on October 18. My latest date for this species in the spring in the Huachucas is April 15 (1903).

Junco caniceps. Gray-headed Junco. Arrived on October 29 and became quite abundant shortly afterward. The latest date at which I have taken this species in this region in the spring is May 2 (1896).

Junco phæonotus palliatus. Arizona Junco. This species was not observed in the parts of the Rincon Mountains we visited, but in the Huachucas it was, as usual, exceedingly abundant from 5500 feet upward. An old female shot on

October 3, is still in the midst of the moult, and ragged-looking birds were observed up to about the middle of the month. Young birds taken the end of October are, in every respect, absolutely indistinguishable from the adults.

Aimophila cassini. Cassin Sparrow. Several were seen in some fields of tall grass near the mouth of Miller Canyon. It was almost impossible to secure specimens, from their habit of lying until almost trodden upon, and then darting off in zig-zag flight through the grass, to repeat the performance when followed up. An immature female shot on October 25 is in the midst of the moult, covered with pin feathers, and others seen during the first week in November were quite as ragged in appearance.

Aimophila ruficeps scotti. Scott Rock Sparrow. Fairly abundant on the rocky hills of the Rincon Mountains. An adult male secured on September 25, and others seen at the same time, were in the midst of the moult. A few were seen in the Huachucas.

Melospiza lincolni. Lincoln Sparrow. A single bird was seen in the Huachucas on October 11.

Pipilo maculatus montanus. Mountain Towhee. A few were seen in the Rincons, while in the Huachucas they were abundant from the summit almost, but not quite, to the base of the range. Immature birds taken the last week in September and during October are not appreciably different from adults.

Pipilo fuscus mesoleucus. Canyon Towhee. I have never in the spring or summer seen this species as abundant in the Huachucas as it was throughout the foothill region this fall. Early in October all the birds seen were moulting, and very ragged in appearance, and specimens with pin feathers on them were taken as late as October 22.

Oreospiza chlorura. Green-tailed Towhee. This species was seen in abundance in the chaparral country between Benson and the Rincon Mountains, on September 22, evidently migrating. It was also met with in the Rincons, and later a few were seen in the foothills of the Huachucas, the last observed being on October 30. My earliest fall date for the species in the latter range is September 1 (1902).

Zamelodia melanocephala. Black-headed Grosbeak. A very few were seen in the Huachucas during the first two weeks in October, the last observed being a female secured October 16. My earliest date for the arrival of the species in this region is April 20 (1902).

Calamospiza melanocorys. Lark Bunting. Seen in abundance along the San Pedro River between Fairbanks and Hereford on September 30. It is rather singular that the species was not observed anywhere else.

Piranga hepatica. Hepatic Tanager. A very few were seen at various times in the lower parts of the Huachucas, below 5500 feet, the last observed being on October 25. My earliest record for the arrival of this species in the Huachucas in the spring is April 11 (1902). An adult male taken October 1 had nearly completed the moult.

Piranga rubra cooperi. Cooper Tanager. An immature female taken in the Rincon Mountains on September 23, 1907, was the only one of the species observed.

Tachycineta thalassina lepida. Northern Violet-green Swallow. Seen at various times during the whole of our stay in the mountains.

Ampelis cedrorum. Cedar Waxwing. Several small flocks were seen in the Huachucas during the first week in October. In my experience this is anything but a common species in southern Arizona.

Phainopepla nitens. Phainopepla. A single bird, an adult male, seen at the

mouth of Miller Canyon on November 4, was, strangely enough, the only one of the species observed during the trip.

Lanius ludovicianus excubitorides. White-rumped Shrike. Fairly common in the foothill region of the Huachucas, and on the plains below. An immature male taken on October 9, had not quite finished the moult.

Vireo huttoni stephensi. Stephens Vireo. Observed only in the Huachucas, where two or three were seen in the live oaks, all below 5500 feet.

Dendroica auduboni. Audubon Warbler. Several were observed on my first visit to the summit of the Huachucas, on October 3, and they were later found quite abundantly in the pines, but not in the lower parts of the mountains. Var. *nigrifrons* had apparently left the mountains before we arrived.

Dendroica nigrescens. Black-throated Gray Warbler. A single bird seen at the mouth of Miller Canyon on October 31 was the only one observed on the trip. My earliest date of arrival for the species in this region is March 31 (1903).

Dendroica townsendi. Townsend Warbler. One was observed at the summit of the Huachucas, about 9000 feet, on October 3. The earliest fall arrival I have record of was seen on August 19 (1902).

Opornis tolmiei. Tolmie Warbler. One or two were noted near the summit of the Huachucas on October 3. My earliest fall record for this region is August 21 (1902).

Wilsonia pusilla pileolata. Pileolated Warbler. One or two were seen in the oak belt of the Huachucas during the first week in October.

Setophaga picta. Painted Redstart. A single bird seen near the mouth of Miller Canyon on October 5 was the only one observed. The earliest date at which I have seen the species in the Huachucas is March 15 (1903).

Anthus pensylvanicus. American Pipit. A few were seen in some flocks of shore larks, on the plains, a mile or two below the Huachucas, on October 28. It does not appear to be a very common species in southern Arizona, and this is the only occasion on which I have seen it in this region.

Toxostoma rufum. Brown Thrasher. It was one of the surprises of the trip when I secured a male bird of this species, on October 5, near the mouth of Miller Canyon, in the Huachucas, where it was feeding in company with several Palmer Thrashers. I believe that this is the first time the species has been recorded from Arizona, which is far beyond the normal limits of the race.

Toxostoma curvirostre palmeri. Palmer Thrasher. In the lower parts of the Huachucas, up to about 5000 feet, this species was quite common, much more so than I have ever found it in the spring. It was not observed in the Rincons, though there is no apparent reason why it should not occur there.

Heleodytes brunneicapillus couesi. Cactus Wren. A few were seen in the foothills of the Huachucas, but they were not at all abundant.

Salpinctes obsoletus. Rock Wren. Fairly common along the base of the Huachucas, and very abundant on the rough, rock-strewn hills of the Rincon Mountains.

Catherpes mexicanus conspersus. Canyon Wren. Seen both in the Huachucas and in the Rincon Mountains, but not common in either range.

Thryomanes bewickii eremophilus. Desert Wren. Found both in the Rincons and in the Huachucas. In the latter range they were seen up to about 6000 feet, the same as during the summer months, and in about equal numbers. They are undoubtedly resident.

Troglodytes aedon parkmanii. Parkman Wren. A single bird remained for

several days, about the middle of October, around a house in the lower part of Miller Canyon. It was the only one of the species seen.

Certhia familiaris albescens. Sierra Madre Creeper. Fairly common throughout the Huachucas during October, but in daily lessening numbers. The species does not remain in the mountains through the winter.

Sitta carolinensis nelsoni. Rocky Mountain Nuthatch. A few were seen in the Rincon Mountains. In the Huachucas they were abundant, mostly in the lower parts of the range.

Sitta pygmæa. Pigmy Nuthatch. The Pigmy Nuthatch appears to be a bird of the pine woods altogether. In the Huachucas it was not seen below 8000 feet at any time, and at the end of October was the only species of bird common at that altitude. It was not met with in the parts of the Rincon Mountains we visited.

Baeolophus wollweberi annexus. Bridled Titmouse. As usual this bird was found in the greatest abundance in the oak belt of the Huachucas, while in the Rincons it was one of the few species that was fairly common. Moulting specimens were taken September 26, and in October young and old were indistinguishable in plumage.

Psaltriparus plumbeus. Lead-colored Bush-tit. This species proved to be unexpectedly rare in the Huachucas. I was in the mountains two weeks before I met with it, and then it was only occasionally that I would run into a flock. It was not seen in the Rincons at all.

Regulus calendula. Ruby-crowned Kinglet. Very common in the Huachucas. Early in October they were frequently met with in flocks of twenty or twenty-five, but their numbers were greatly lessened by the end of the month. I believe that a few undoubtedly remain in the mountains through the winter.

Myadestes townsendi. Townsend Solitaire. A single bird was seen near the mouth of Miller Canyon on October 10.

Hylocichla guttata guttata. Alaska Hermit Thrush. Two specimens referable to this race were secured on October 29 and November 6, respectively. Very few Hermit Thrushes of any sort were seen.

Hylocichla guttata auduboni. Audubon Hermit Thrush. A female of this variety was secured in the Huachucas on October 11.

Sialia mexicana bairdi. Chestnut-backed Bluebird. One or two small flocks were seen in the Rincon Mountains. In the Huachucas the species was not as abundant as I have found it during the summer months, and was most frequently met with in the foothill region.

Sialia arctica. Mountain Bluebird. Seen on the plains below the Huachucas. The first flock was observed on October 28, and the species was afterwards met with on several occasions.

Chicago, Illinois.

THE MEXICAN BLACK HAWK

By GERALD BAMBER THOMAS

DURING the fall and winter of 1905 and spring of 1906 it was my pleasure to observe quite extensively the habits of one of the most, if not the most interesting of our Raptore, the Mexican Black Hawk (*Urubitinga anhro-cina*). Nearly all my observations were confined to the little colony of British

Honduras, Central America, where the Mexican Black Hawk is by far the most abundant hawk of the region.

The favorite haunt of this species there, I found, was the long stretches of sand dunes and savannas studded here and there by clumps of palmetto and gnarled pines.

Here the ground is honey-combed by thousands of holes of various sizes, the abode of countless numbers of huge land crabs. In the evening, as soon as the sun is down, they come out from their holes by thousands, hurrying here and there and always fighting, brandishing their big claws in the air like a pigmy wielding a huge scoop-shovel.

It is then that the hawks are seen busily engaged in their pursuit for food, as these crabs form almost their sole diet in this particular locality. They always catch and kill more than they can eat at the time in order that they may not be wanting on the morrow when all the crabs have gone deep in their holes to escape the heat of the day. Occasionally I noticed a hawk flying to the nest with a large



NEST OF MEXICAN BLACK HAWK

lizard or snake, but more frequently they were satisfied with the crabs obtained the night before. In not one instance did I see them in pursuit of any birds, nor do their nests with young show any signs that birds are ever taken as prey.

In flight they excel every one of the hawks, kites, or falcons except possibly the Swallow-tailed Kite. Their flight is really marvelous, excelling in some particulars even the far-famed Frigate or Man-o-war Bird. The greater part of the year they are rather dull and sluggish but when nesting time comes they are ever on the wing until the young are able to take care of themselves.

It is very interesting to see them obtaining material for the nest. They circle high in the air sending out their queer whistling cry, when suddenly one of them folds its wings very close to its side and plunges towards the ground with the speed of an arrow. One almost holds his breath expecting to see the great bird strike the earth with such force that he will be transformed into a lifeless mass of bone and feather. But suddenly just before he reaches the dead tree, thru whose branches you expect to see him crashing, he throws open his wings to their full ex-

tent, his tail spreads and flattens against the downward rush and the great talons hang loosely down. Then gliding swiftly over the topmost branch, the swinging and apparently useless feet suddenly stiffen, a faint crack is heard and he slowly fans his way over to the nearby nest, firmly grasping in his talons a twig from the tree on which he seemingly so nearly escaped destruction.

The nest itself is a huge platform of sticks often measuring four feet across and two feet in depth, sometimes deeply and other times only slightly cupped, lined with pieces of green leaves and green pine needles. Their location I always found was in a pine tree, the distance from the ground varying from fifteen to fifty or sixty feet. More often, however, they were between twenty and thirty feet up, in small pines.

According to several good authorities the usual complement of eggs is two and three, but in only one instance out of the twenty-seven nests examined was there more than one egg, and this exceptional nest contained two. In some cases they are beautifully marked with lavender, umber and light brown, and in other cases they are totally unmarked; however the greater majority show distinct markings.

The old birds are very bold when the nest contains young and often perch on a branch five or six feet from the nest while one handles the young. Often, too, the male, circling high in the air with dangling legs, a marked peculiarity of this species, will suddenly make one of his awful plunges straight at the intruder, swerving just in time to avoid the shock which would undoubtedly kill the bird and knock the intruder out of the tree.

Like many other hawks, if the nest is robbed, they at once go to work on another nest, and I have taken three sets in one season from the same bird.

Livermore, Iowa.

A MIGRATION WAVE OF VARIED THRUSHES

By JOSEPH MAILLIARD

OCTOBER 20, 1906, is a date firmly fixed in my memory by two occurrences. One was the commencement of one of the worst forest fires that we have ever been threatened with—started as usual by criminal foolishness—and the other the witnessing of the only actual *wave* of migration on the Pacific Coast that I have had the good fortune to observe. The latter, happily, came first in order on that memorable day, the second occurrence keeping me too busy for a week to think of anything beyond saving the Rancho San Geronimo, and possibly the old idea of future punishment, when the flames got the better of us at times. On the morning of this day I started out early on a quail hunt, with my son and my ranch superintendent, as had been previously arranged, partly on business and partly on pleasure bent.

A very strong, and exceedingly warm and dry north wind was blowing, amounting in places to a veritable gale. We drove from the house to the extreme end of the ranch, a distance of about four miles, before sunrise, in the face of the gale, and putting up the team in the barn there, commenced on foot to ascend the range with the purpose in view of looking over the property and, incidentally, seeking for quail in their accustomed haunts. The sun was rising as we began the ascent and the air startlingly clear. We had taken but a few steps when my atten-

tion was attracted by the sight of a few birds, about the size of robins, flying high and scattered over the sky. This was so unusual at this time of day that I remarked upon the phenomenon to my companions.

As the sun cleared the horizon and the light increased we realized the fact that the sky was dotted in every direction with birds flying singly, and at quite an elevation, mostly toward the south. As the light grew stronger individuals here and there dropped to a lower altitude and allowed us to discern the fact that they were Varied Thrushes (*Ixoreus naevius*). For some time their numbers increased until there were hundreds in sight at once in any direction one might look, and as we were by this time pretty well up on the range we had quite an extended view. Soon we noticed single birds dropping out of the flight and settling in the bushes. These must have been our regular winter residents. Apparently not over one in a hundred dropped out in this way. After nine A. M. the numbers decreased and by ten o'clock the flight was over, with no birds in sight except a few flying from one canyon to another and settling down locally, apparently. I have seen many flights of birds, and migratory flights at that, but only on a limited scale, during many years of observation in California, and yet have never witnessed such a genuine wave of migration, on so vast a scale, as occurred between the hours of six and ten A. M. on the above date. Nor have I seen any mention of this wave having been observed by others. We are not supposed to have such things in California, as the birds generally move more leisurely on this coast when migrating. It would be interesting to know if any other members of the C. O. C. encountered this wave.

San Francisco, California.

NOTES ON THE WALTZING INSTINCT IN OSTRICHES.

By F. W. D'EVELYN

ONE evening just as the lengthened shadows in the West proclaimed the advent of early darkness, for there is no twilight in Africa, while driving along the high veldt leading to Pretoria, then but a village nestling among beautiful hedges of rose trees, my Kaffir suddenly startled me by exclaiming "Nance Inje": there is an ostrich! The shrill tone of the interesting announcement for the moment threw me off my guard; quickly recovering myself I raised my carbine to my shoulder and sent a 45-caliber bullet after the great grey bird which by that time was making rapid strides in a two-step gait several rods away, that baffled accurate shooting.

The motion of the bird was peculiar but characteristic of the species in the first stages of its flight, and was one of the gaits in the strange combination of movements so well known to those who are familiar with the birds in their wild or domestic state. It was suggestive of a form of dance, indeed in many of its parts not at all dissimilar to the steps in some of the native dances in Kaffir-land. The dance is a rapid whirl suggestive of the turn of the dervish priest; the ostrich however turns first in one direction and then while turning, without slackening speed, suddenly reverses and turns the other direction; the wings are held extended and conform with the alternate raising and lowering of the sides; the head is sometimes held extended forward with the neck outstretched and again held backward with the head erect. Even when going at full speed the bird will suddenly pivot and go directly opposite to its former course.

The young chicks exhibit this movement, but are not at first anywhere near as perfect as the adult birds, showing that an education is necessary to perfect that which without doubt is an instinctive character.

The manager of the Cawston Ostrich Farm informs me that their chicks, the many generations removed from the wild birds, exhibit the dance movement, but very imperfectly, scarcely running any distance before squatting down, as if there were dawning within them an instinct, a reflex of the narrowed horizon permitted by the inclosure in which their parents have been reared. Single birds or a few birds rarely make as good a performance as when there are several together, thus giving proof that there is a factor of suggestion or imitation requisite to make the best actors.

That these movements are the outcome of excessive vitality or playfulness is scarcely to be accepted; there must be utility if not necessity in the action. In this connection I will say that I am strongly attracted to the suggestion of an esteemed colleague, J. E. Duerden, of the Transvaal. Mr. Duerden states that he is of the opinion that the waltz is simply a protective movement calculated to render the bird less liable to be seized by any of its natural enemies that are so common in the habitat of the bird. The ostrich inhabits open or bush-covered lands that are also the home of the lion, the brush cat and the leopard. These animals capture their prey by springing upon it. The ostrich, as was demonstrated by the case cited in my opening remarks, when surprised jerks itself so quickly from side to side that its pursuer finds it almost impossible to arrange its spring, or in case of a human hunter, for him to aim accurately. This is the character of the defence when the bird is first aroused; but let attack press more persistently and the bird darts off with great rapidity for a long distance and then suddenly changes its direction of flight so quickly that no sort of hunter could be prepared for it.

Much less successful is the defence or combat of the captive, or the ostrich at bay. Then the bird depends on kicking forward, hoping that with its powerful foot it will down its enemy and at the same time tear open the body with the claw-like nail on the one great toe. Kicking would be of little avail with the lion or leopard. So the ostrich trusts to nimbleness of legs to dodge the spring, and then by fleetness of foot to get away from the neighborhood.

Alameda, California.

THREE NESTS OF NOTE FROM NORTHERN CALIFORNIA

By HARRY H. SHELDON

WE were camped, the two of us, on the Lagunitas Creek, close to the mouth of the Little Carson, on the first Saturday night in May, 1907, the opening of the trout season. It seemed but a short time after bacon and coffee that our pipes went out and darkness had turned to the gray of early morning. An occasional thrush would give a short whistle as the just awakening, and, to further tell us the time had come to crawl from our warm blankets, a horned owl gave a series of hoots as a farewell to his night of depredations.

Moving briskly to keep warm we were soon thru with breakfast and wended our way up the Little Carson which by noon had afforded us a nice mess of trout. We then lay ourselves at the base of a hoary pine to have lunch. Up to this instant fishing had been the main feature of the trip, but upon hearing the pleasant

notes of a Western Winter Wren (*Nannus hiemalis pacificus*), we imagined ourselves on a collecting trip and silently waited for this uncommon resident to entertain us again. The song was not repeated but directly in front of us from the upturned end of a charred log, a small ball of brown feathers darted into the brush below and, odd to say, neither bird nor song was seen or heard again. However a nest was evidently in the log, and with little trouble we found a cosy home tucked away in a niche. Altho there were no eggs to greet us the nest was lined and ready to be permanently occupied.

We had planned to take a collecting trip into Sonoma County two weeks from this date, and for this reason were obliged to allow but seven days for a complete set, which we hardly expected. However, on the following Sunday we made the trip again and after a fresh morning drive from San Anselmo of an hour and a half, tied our horse and proceeded to walk for another hour up the "angler's trail" of the Lagunitas to the mouth of the Little Carson where we plodded and climbed our way thru timber and brush until with much anticipation we came to the charred log. After waiting for some time in a secluded spot in hopes of seeing the birds, we approached the log and found that three eggs had been laid during the week.

After waiting over an hour without seeing either of the birds, with the nest and eggs carefully packed we made our way down the canyon to our rig. Before we had gone far, Taylor, my companion, found a nice set of Steller Jay and also a newly built nest of another Winter Wren, which, despite its unusual beauty we left in the expectation of procuring a complete set, should the birds return to the same site the following season, for, as has already been stated, we could not again visit the locality until another year to come. The nest taken was placed in the end of a log five feet from the ground. The material used consisted of redwood bark fibers, pine needles, dead moss, leaves and twigs, and lined with rabbit's fur and hair and a few feathers. The eggs are faintly spotted with a pinkish brown, the ground color being a creamy white resembling the eggs of the Vigors Wren.

In June of 1904 the writer made a collecting trip to the South Fork of the Gualala River, a small stream about forty feet in width slowly winding itself down a deep thickly wooded canyon. Its banks are bordered with a dense growth of huckleberry, and at their extreme edge the sweet azalia grows in myriads from a tangle of various ferns and lilies. In such places as this the Monterey Hermit Thrush (*Hylocichla guttata slevini*) makes his summer home.

It was all due to luck that I first became acquainted with this mountain songster. While scanning the trunk of a pine tree endeavoring to get a shot at a creeper, I tripped on a branch of a fallen laurel and flushed a bird from her nest. The creeper was immediately forgotten; for the bird, as she stood frozen to the fence post, proved to be a Monterey Hermit Thrush, and within reach of me in the suckers of the stump was her green mossy nest and three sky-blue eggs. As much as I wanted to stand and gaze at my fortunate discovery I was obliged to leave the vicinity instantly to assure myself of obtaining a full set. Sad to relate, on my return the next day, the nest was empty, not even a shell was left to furnish a description of the eggs for future reference. And as I stared into the vacant nest, the harsh hote of a Jay in a nearby thicket easily explained the cause of the disaster, and with the nest as a token I departed for camp.

About the end of June, while fishing, I found another nest situated on the bank of the river in a bush of huckleberry. Four fledglings scattered into the brush as I was about to reach up to the nest. The parents were soon on the scene and were not at all shy, as I expected they would be, even tho under such circumstances.

With sharp whistling notes they endeavored to drive me away from their home, and I obliged them by retreating to a log, where I sat watching their maneuvers. Nothing more interesting happened than the usual procedure of locating their terrified young, which in a few minutes were in evidence from the subdued tone of their notes; so continuing my way down stream I thought of another season to come when I would again make the trip to the South Fork for the sole purpose of obtaining the nest and eggs of this very desirable bird.

The opportunity arrived in May of last year, 1907, when in the company of "Fy" Taylor, my usual companion upon such expeditions, I returned to the same locality. And the 27th of May found us on the South Fork up to our necks in patches of huckleberry. A few nests found of the year previous told us we were on the right track and this was verified later by a bleached chip of rotten wood showing thru a bush of huckleberry which revealed a new nest empty, but apparently in readiness for the bird to take possession. On the following day upon our return the nest contained an egg. The bird being away we quickly left not caring to meet her at this period of the game. On our way back to camp another nest was found by Taylor in a clump of branches of an oak tree about eight feet from the ground above the stream. The nest was almost finished and as we stood beneath it the bird flew into the tree directly in front of us with more building material, but seeing us she quickly disappeared, and evidently started a home elsewhere, for the nest was never completed nor was the bird seen again. The last nest was found May 30th, placed in the shoots of an alder on the bank of the river, and like our previous experience the bird saw us and the nest was abandoned. By this time the first nest found contained three eggs, the bird having laid each day from the date of discovery and three days later, on the 3rd of June, we made a final trip to take the set, which was complete with the three eggs. During the three visits to this nest the bird was not seen until the last moment. As we were wrapping her nest and eggs she darted into the bush above us and seeing the nest gone, flew to a nearby fence and was shot, to complete identification.

All nests found were placed from two to eight feet from the ground, their favorite nesting site being in patches of huckleberry and in all cases situated close to the stream. This nest was placed in a bush of huckleberry on the edge of the stream three feet from the creek bed. It was composed of chips of dead wood, small branches of huckleberry, dead leaves and twigs, and held together with mosses and rootlets. The lining consisted of fine redwood bark, fibers, fine rootlets and the remains of dead leaves. The eggs are a shade lighter than the robin's and of one color.

On the 28th of May, while on our way to the coast after nests of the Nuttall Sparrow another interesting bird was met with. After a hurried visit to a few mammal traps we made our way up a steep cattle-worn trail to the ridge above camp overlooking the ocean. At the top in the center of a little glade a small group of laurels, madrones, tan-oaks and firs, principally the latter, stood with the quiet of a hot morning atmosphere. And out of this quiet came at intervals the rolling note of a Louisiana Tanager which was a gentle hint for us to cross over and investigate the interior. Just as we broke thru the first low branches at the edge, a dead limb cracked under our feet and a much frightened and surprised Pileated Woodpecker dropped backward from a dead stump and went cackling off thru the timber, much the same as a guinea-hen warbles when with outstretched neck she endeavors to scale the barn yard fence. Floundering over logs and thru brush, Taylor was hot on his trail; for skins of these big fellows are worth a hard day's work, and besides when brought to view in after days usually bring up a pleasant memory. While I

waited his return the subdued notes of a Western Golden-crowned Kinglet caused me to look to the top branches of a fir close by. I looked till my neck ached, but as usual this green mite of a bird that nature so skilfully blends with the tint of the forest was everywhere but the place I looked for him. However, as I was about to give up the search he flew down into a tan-oak. Following close after him I soon found him clinging to the underside of a branch, and blazed away. He silently left the tree without a feather disturbed. Again following to a large ash I was about to pull on him with the other barrel, when I noticed another Kinglet join him and I stood close to the trunk to watch them.

If it had not been for my bad judgment, a defective shell, or probably more providence than anything, there would have been no cause to write these notes. Flying down to within five feet of my head the mate began tugging at some moss which grew in clusters on the trunk, and immediately a mental picture of a partly constructed nest flashed across my mind. It was hard to suppress an inclination to turn my head in search of it, which action would certainly have spoiled any chance of its discovery. But I obeyed the instinct to freeze, and stood afraid even to wink until the bird fluttered over my head with a few timid peeps sixty feet up in a tall fir and disappeared into a cluster of small branches on the underside and close to the end of a large overhanging limb.

About this time Taylor appeared on the scene with a fine male Pileated and we exchanged congratulations. For about a half hour we stayed in this spot watching the Kinglets make trip after trip to their nest which was absolutely invisible from any point of view. But it was there, that was sure; and for the fact that the birds had not the slightest regard for our presence, it seemed a certainty that a little patience on our part would mean the nest and eggs of *Regulus satrapa olivaceus*. Much satisfied with the prospects in view we resumed our way to the coast and by noon were in the midst of tangles of blackberry thickets with Sparrows piping all about us; but with all this encouragement not a nest was found, until we again made the trip on the second of June when we took three rich sets.

Meantime the Kinglets were not seen making trips to their home with building material as they had done on the day of finding the nest; in fact only once did I hear them in the vicinity and then neither of them were seen. Evidently they must have been adding the last finishing touches when I first saw them. Much to our regret we had a limited amount of time to stay on the South Fork; business compelled us to break camp on the 8th of June. So the day before, we were obliged to pay our last visit to the "Kinglet tree". A full set was hardly expected, two or three eggs would answer a good purpose, and the anticipation from this thought hurried us across the open glade to the tall fir.

Bird life was unusually quiet, probably due to a thick fog that floated up the gulches from the ocean below and reaching the ridge would spread its misty blanket over the timber where it hung until the warm rays of the noon sun melted it into space. On one occasion it became so *damp* owing to a fog of this sort which managed to get down into the canyon one night, that waking up half drenched we decided it would be more comfortable around a camp fire than to attempt sleep in miniature lakes of fog. And sitting by a smouldering fire we smoked and were smoked, till the first sign of morning gave us a chance to start another day.

But back to the tall fir and the Kinglets: After exchanging ideas as to which was the best way of getting to the nest we decided to both climb to the limb in which it was placed and take a chance at crawling down the limb beneath. Taking a coil of stout cord I fastened one end as near the nest as I could reach and tossing

the other to Taylor told him to take in slack while I pulled inward, until the nest began to tilt and we dared not draw it closer. Being compelled to hold on with one hand I was at some disadvantage but finally managed to reach the branch covering the nest, and carefully breaking it away saw for the first time how it really looked. A green bunch of delicate mosses clinging gracefully to the inner side of a small cluster of branches where in its cavity of silky fibers and downy feathers, lay like pearls five faintly spotted eggs almost as frail as bubbles, which I covered with a soft piece of cotton that made it safe to pull the limb towards me another foot, giving me an opportunity to use both hands. When the big limb flew back into place and I held the treasure intact, a mingled feeling of nervous joy and relief went out in a big sigh, and I looked back to the time when I tried to kill one of those Kinglets and understood why kind providence spoiled my aim.

The nest is a compact ball of mosses and lichens with a round deep cavity $1\frac{3}{4}$ inches deep by $1\frac{1}{4}$ in diameter; the lining consists of a few cow hairs, fine bark fibers and feathers woven in such a manner about the edge that there appears to be hardly any cavity at all. The eggs are white with a ring of faint brown spots on the large ends and here and there scattered over the surface.

San Anselmo, Cal.

NOTES FROM SANTA CRUZ ISLAND

By C. B. LINTON

AT 11:30 p. m., November 19, 1907, my father (H. Linton), Mr. George Willett, and myself left San Pedro harbor in a dilapidated fishing smack and in company with a crawfisherman, one "Cold-foot" Jorgensen. We arrived off the south end of Santa Cruz Island at 10:30 the following day during a stiff nor'wester. For various reasons we were unable to make camp until the 22nd. It may not be amiss to state here that twice during the blow we were nearly wrecked: once while at anchor in Potatoe Harbor, a broken anchor allowing the boat to drift within the breaker line and nearly onto the rocks. In this instance the timely arrival of Willett and H. Linton in a small boat, saved the day, and incidentally the fishing smack. At another time (the engine having broken down) we were blown nearly onto the rocks of Ana Capa Island; but with father at the wheel and Willett and I on the "sheet" we managed to hold her off. I mention the foregoing, and the many sleepless nights spent on the rocky shores, "running" the surf several times each day (with attendant duckings), etc., merely as a warning to those who seem inclined to believe a field naturalist's life "strewn with roses". (It's generally strewn with cacti!) For instance, here is a fair sample day: November 20, a. m. rowed seven miles up coast; coming back were obliged to put ashore in rocky cove, thru heavy breakers, to keep from swamping during high wind; secured 12 specimens here; reached camp at 1:30 p. m.; made up specimens, 6 p. m.; broke camp, packed 100 green specimens, loaded tent and camp outfit in skiff, rowed four miles along dangerous coast after dark; 8:30 p. m. ran breakers and made camp on beach; 3:30 a. m. broke camp, ran breakers, rowed fourteen miles to Northwest Harbor, ran breakers, made camp, went after specimens; 5 p. m. to 10 p. m. made skins. "It's a strenuous life".

Santa Cruz Island is very mountainous, with wide valleys intervening. There

are perhaps 40,000 sheep on the island, a few cattle, immense barley fields and grape vineyards, several ranches, a large winery, and some 100 men employed during the harvesting season. It was with the kind permission of Mr. Fred M. Caire, owner of the island, that I was enabled to carry on the observations herein chronicled.

Our first camp was on the southern coast at Cochas Pietres (Hog Harbor?). The tiny streams in the wide canyons here were lined with an abundant growth of willows and wild blackberry vines. The hills, sloping gradually to the higher range, were covered with holly, manzanita, iron wood and wild cherry, with here and there an oak, and, of course, cacti in abundance. We remained here until November 30, Mr. Willett then leaving for Los Angeles, via boat to Santa Barbara.

Our second camp was made at Northwest Harbor. This is the desert portion of the island and is bordered by a rocky, precipitous coast. Ten days were spent here before we could round the north end of the island, owing to severe storms.

Our last camp was among the pines near Prisoners' Harbor, northeast coast. Here we found the Santa Cruz pines, oaks, holly, manzanita, ironwood, cherry, etc., in superabundance. The highest altitude is in this vicinity, about 2800 feet. Deep inaccessible gorges and impenetrable thickets were encountered. In the limited time at my disposal I could only commence work here and hope to return soon to continue the work planned.

Mr. Grinnell has kindly examined many of the specimens secured and identified many of the, to me, doubtful ones.

Colymbus californicus. American Eared Grebe. One specimen secured by Mr. Willett in November.

Gavia pacifica. Pacific Loon. Abundant in migration; several specimens taken.

Cerorhinca monocerata. Rhinoceros Auklet. Mr. Willett and I secured specimens along the southern coast in November. In December I secured several at Northwest and Prisoners' Harbors. Those observed were not especially shy and were easily approached by boat, tho of course diving often and sometimes leading us a merry chase. We were unable to flush one from the water. They were, however, sometimes seen on the wing, passing up and down the coast. One was seen in the bay at Santa Barbara, within a few feet of a fisherman at work. Crows examined contained freshly caught sardines, 3 to 4 inches long; stomach contents: meat and bones of small fish.

Ptychoramphus aleuticus. Cassin Auklet. Common about Anacapa Island, and in the channel between Anacapa and Santa Cruz. Several were taken along south coast, and noted at other points.

Synthliboramphus antiquus. Ancient Murrelet. I secured two specimens near shore at Prisoners', December 17 and 18. This, I believe, is the southernmost record for this species, Mr. Loomis having taken them at Monterey.

Brachyramphus hypoleucus. Xantus Murrelet. One taken by Mr. Willett about one mile out from Cochas Pietres.

Cephus columba. Pigeon Guillemot. Reported breeding in Painted Cave, northwest coast, by a fisherman.

Larus occidentalis. Western Gull. Very common.

Larus heermanni. Heerman Gull. Very common. Principal food consisted of shrimps secured in the kelp fields near shore. November and December many birds were just changing from "winter" to "summer" plumage, the heads being mixed white and dark grayish.

Fulmarus glacialis glupischa. Pacific Fulmar. Mr. Willett and I secured several specimens of the dark phase. One light phase was taken near shore, November 25. Six specimens in my collection range from very dark slate-gray to nearly pure white. December 4 I secured two dark-phase specimens in the surf, with a spaniel retriever; these had died during a stormy night and drifted in.

Sterna maxima. Royal Tern. Common.

Puffinus opisthomelas. Black-vented Shearwater. Seen by Mr. Willett on several occasions.

Puffinus griseus. Dark-bodied Shearwater. One secured by Mr. Willett, November 20, but was washed overboard during a storm. Another was taken November 23 by Mr. Willett. Several were seen November 20 to December 1.

Oceanodroma Melania. Black Petrel. A dark petrel, probably of this species, seen near Anacapa November 20.

Phalacrocorax dilophus albociliatus. Farallone Cormorant. Fairly common.

Phalacrocorax penicillatus. Brandt Cormorant. Abundant.

Phalacrocorax pelagicus resplendens. Baird Cormorant. Common.

Pelecanus californicus. California Brown Pelican. Fairly common on both coasts. Adults and birds of the year were noted.

Merganser serrator. Red-breasted Merganser. Frequently seen about Northwest Harbor, feeding in the tide pools. The craw of a ♀, obtained December 2, contained 9 rock bass and one spotted shark, each 2 to 4 inches long.

Oidemia deglandi. White-winged Scoter. Several seen by Mr. Willett.

Oidemia perspicillata. Surf Scoter. Adults and immature birds were common on both coasts.

Anser gambeli. American White-fronted Goose. Abundant on Santa Rosa Island.

Ardea herodias. Great Blue Heron. Several seen along both coasts. Usually standing "hip-deep" in the kelp beds 50 to 200 yards off shore.

Fulica americana. American Coot. One seen December 18, in the marsh at Prisoners' Harbor.

Crymophilus fulicarius. Red Phalarope. Abundant in the channel between Anacapa and Santa Cruz. Very common in the kelp fields along the southern coast until November 27; few seen after that date.

Tringa minutilla. Least Sandpiper. Seen only at Northwest Harbor.

Calidris arenaria. Sanderling. Seen at Northwest Harbor.

Heteractitis incanus. Wandering Tattler. Specimens secured at each camp. The two first primaries of one specimen secured December 17, were still in "breeding plumage" color, namely rich brownish, not having been "dropped" for the gray winter ones, tho the other primaries were new.

Actitis macularia. Spotted Sandpiper. Fairly common on both coasts.

Numenius hudsonicus. Hudsonian Curlew. One secured December 8 at Northwest Harbor.

Squatarola squatarola. Black-bellied Plover. Common at Northwest Harbor. Large flocks seen feeding on the mesas one-half to one mile inland, and roosting on the small rocky islands, near shore.

Ægialitis vocifera. Killdeer. Several seen on the beach and mesas, Northwest Harbor.

Ægialitis nivosa. Snowy Plover. Fairly common at Northwest Harbor.

Arenaria melanocephala. Black Turnstone. Several specimens secured by Mr. Willett at Cochas Pietres. Abundant at Northwest Harbor.

Hæmatopus bachmani. Black Oystercatcher. December 1 to 8 seven speci-

mens were seen and five secured, at Northwest Harbor. They were always observed on the outer rim of volcanic rocks standing in the surf, or on the rocky "islands", and were hard to secure. The feet and legs of specimens taken, are pale flesh color instead of red as in breeding season. On December 3 I shot an oystercatcher which fell in the heavy surf. Unable to secure it myself I had started tentward for my retriever when I was greatly chagrined to see a bald eagle swoop down, gather in my prize and carry it away.

Zenaidura macroura. Mourning Dove. Common inland.

Buteo borealis calurus. Western Red-tail. Several seen.

Haliæetus leucocephalus leucocephalus. Bald Eagle. Adults and birds of the year seen at each camp.

Falco peregrinus anatum. Duck Hawk. Fairly common along the southern and southwestern coasts, where they undoubtedly breed. Mr. Willett and H. Linton observed one pair capture a red phalarope that was feeding in the kelp near shore. First one falcon then the other giving chase until the phalarope was tired out and captured. Black turnstones were the favorite prey about Northwest Harbor.

Falco columbarius. Pigeon Hawk. I saw several in the canyons of both coasts. One alighted within 15 feet of my hiding place in the willows but darted away before I could turn my gun. December 18 I saw a pigeon hawk carrying a screaming bird in its talons.

Falco sparverius phalœna. Desert Sparrow Hawk. Occasionally seen. An adult ♂ and ♀ secured in December.

Pandion carolinensis. American Osprey. I saw one osprey near the southern coast November 25.

Strix pratina *cola*. American Barn Owl. Mr. Willett secured one specimen, November 20.

Speotyto cunicularia hypogæa. Burrowing Owl. Fairly common in suitable localities. Specimens secured average slightly paler than those taken in the vicinity of Los Angeles. Measurements also differ slightly.

Ceryle alcyon. Belted Kingfisher. Seen on both coasts.

Colaptes cafer collaris. Red-shafted Flicker. Fairly common near Cochas Pietres and in the pine district. Two specimens preserved.

Aeronauta melanoleucus. White-throated Swift. Several seen December 18.

Calypte anna. Anna Hummingbird. Fairly common; several preserved.

Selasphorus allenii. Allen Hummingbird. Several seen. An adult male was secured November 24.

Tyrannus vociferans. Cassin Kingbird. A kingbird seen near camp November 24, doubtless this species.

Sayornis saya. Say Phœbe. Fairly common.

Sayornis nigricans. Black Phœbe. Fairly common.

Contopus richardsoni richardsoni. Western Wood Pewee. I heard several among the pines in December but did not secure a specimen.

Empidonax difficilis. Western Flycatcher. Several seen and heard. November to December 15; none secured.

Otocoris insularis. Island Horned Lark. Common on the mesas inland.

Aphelocoma insularis. Santa Cruz Island Jay. Abundant except on northwestern portion of island. Those seen in the vicinity of Cochas Pietres were nearly all females. In the higher pine region this order was reversed; only two or three females observed.

Corvus corax sinuatus. American Raven. Several specimens taken by Mr.

Willett and myself. Among these were specimens corresponding with the description of the supposed Clarion Island Raven. These are undoubtedly *Corvus corax sinuatus*.

Sturnella neglecta. Western Meadow Lark. Common inland.

Carpodacus purpureus californicus. California Purple Finch. One female specimen secured in the pines by H. Linton December 16, and several others seen.

Carpodacus clementis. San Clemente House Finch. Common over most of the island.

Astragalinus psaltria hesperophilus. Arkansas Goldfinch. Several seen at Cochas Pietres in November. One taken.

Ammodramus sandwichensis alaudinus. Western Savanna Sparrow. Several seen, Northwest Harbor.

Ammodramus sandwichensis bryanti. Bryant Marsh Sparrow. Two seen and one taken at Northwest Harbor in December.

Chondestes grammacus strigatus. Western Lark Sparrow. Several seen at Cochas Pietres in November. One was taken.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Common everywhere.

Zonotrichia coronata. Golden-crowned Sparrow. Fairly common everywhere.

Junco hyemalis thurberi. Thurber Junco. I secured an adult male and female in the head of a canyon near Cochas Pietres November 28.

Aimophila ruficeps ruficeps. Rufous-crowned Sparrow. Mr. Willett and I each secured a specimen in the brushy canyon near the south coast. In the early evening of December 16 I observed a flock of 40 or 50 birds feeding on a grassy hillside near Prisoners', securing two specimens.

Melospiza graminea (?). Santa Barbara Song Sparrow. Fairly common.

Passerella iliaca insularis. Kadiak Fox Sparrow. Mr. Willett and I secured several specimens at Cochas Pietres in November. December 16 I secured another in the pines.

Passerella iliaca megarhyncha. Thick-billed Sparrow. November 24 I secured 2 specimens in a canyon of the southern coast.

Passerella iliaca stephensi. Stephens Fox Sparrow. One taken December 14, in the manzanita underbrush in the pines at an altitude of about 2800 feet.

Pipilo clementæ (?). San Clemente Towhee. Fairly common. Some specimens secured had not lost the brownish edgings to the feathers of the back, giving them a peculiar appearance.

Lanius anthonyi. Island Shrike. Fairly well distributed over the whole island. 16 specimens in all, preserved.

Vireo huttoni mailliardorum. Santa Cruz Island Vireo. Fairly common.

Helminthophila celata celata. Orange-crowned Warbler. One specimen taken November 29, but lost during storm at sea.

Helminthophila sordida. Dusky Warbler. Very common.

Dendroica townsendi. Townsend Warbler. I secured a single specimen in the oaks, Prisoners', December 13.

Anthus pensylvanicus. American Pipit. Several seen.

Mimus polyglottos leucomelas. Western Mockingbird. Fairly common.

Salpinctes obsoletus. Rock Wren. Fairly common in certain localities.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. In a canyon near Prisoners', December 19, I secured an adult ♂.

Thryomanes nesophilus. Santa Cruz Island Wren. Fairly common. I can discern no difference between this wren and the specimens from vicinity of Los Angeles and Pasadena.

Psaltriparus minimus minimus. California Bush-tit. Several seen. One taken.

Regulus calendula. Ruby-crowned Kinglet. Common.

Polioptila caerulea obscura. Western Gnatcatcher. A gnatcatcher heard on several occasions in the brush. Probably of this species.

Hylocichla ustulata ustulata. Russet-backed Thrush. One secured.

Hylocichla guttata nana. Dwarf Hermit Thrush. Common.

Long Beach, California.

FROM FIELD AND STUDY

The Green-winged Teal (Nettion carolinensis) breeding in California.—While engaged in field work for the U. S. Biological Survey along the west shore of Tulare Lake, California, I secured a female Green-winged Teal and set of seven eggs, July 7, 1907. The brooding bird was shot as she flew from the nest. Several other ducks of the same species were seen within a few miles, and appeared to be part of a quite local colony.

This is apparently the first record of the nesting of *Nettion carolinensis* in the State.—E. A. GOLDMAN, *Biological Survey, Washington, D. C.*

Cooper Hawks Attacking Crows.—During the fall of 1907 a flock of crows, numbering perhaps a thousand, frequently came out from the San Francisco Bay shore to spend the day with us at San Geronimo, feeding about the fields and on the hillsides. It happened that about noon on October 27th the flock lit in some trees near our barns. As I came out of the house just after lunch there was quite a commotion in the flock, and it proved that two Cooper Hawks (*Accipiter cooperi*) were attacking the crows, doing some remarkably good team work in their endeavors to lay low one of their dusky enemies. The crows were, however, too alert for the hawks and no loss was inflicted beyond a few feathers. The excitement was so great that I was enabled to walk up on the flock and bag both hawks. One is accustomed to see crows attacking hawks, and it seems rather surprising that the opposite would take place. But in this instance there was no doubt in the world of the true state of the case. The crows were quietly perched on the dead tops of some alders that had been killed by the changing of the course of a small stream, and the hawks deliberately pitched into them, one attacking from above and the other from below. One hawk would perch on top of a tree above the crows while the other would go off a little way and then swoop down on the flock, repeating the operation—with variations. Whether this was all done in a spirit of bravado, or for the purpose of securing a meal, it is of course impossible to determine. My foreman and I watched the game for some time before killing the hawks; then seeing that no damage was being done and fearing to lose the opportunity of destroying such enemies to bird life as the Cooper Hawk has proved itself to be, I walked up to the flock and shot both the members of the attacking party.—JOSEPH MAILLIARD, *San Francisco, California.*

Salpinctes obsoletus pulverius restricted to San Nicholas Island.—After carefully examining specimens from San Clemente Island, Mr. Grinnell confirms my opinion that they are *Salpinctes obsoletus* and that the name *S. o. pulverius* should be restricted to the San Nicholas Island Rock Wren.—C. B. LINTON, *Long Beach, California.*

Odds and Ends From Washington State.—What I call my "Old Curiosity Shop," a succession of weed grown fields bordered by alders, is situated in the heart of the Puyallup Valley in an abundantly watered region. It has done unusually well for me during the past fall and winter, having produced the following records which must be considered very unusual for this State.

The first surprise came on November 7, in the shape of a white-winged Dove (*Melopelia leucomela*), which proved to be an adult female. Even at this date the feathers were in a surprisingly good state of preservation, removing the very unlikely possibilities of its being a cage-bird. This is the only record of this dove from Washington, and we can hardly surmise what could have driven it so far from its natural habitat.

December 16: I flushed two Golden-crowned Sparrows (*Zonotrichia coronata*) that were in

company with a large flock of Oregon Juncos (*Junco hyemalis oreganus*). I shot one of the sparrows which proved to be a male of the year, thus making certain of the record. On January 15, the remaining bird, also a young of the year, was still in the same weed patch, from which we can confidently assume that it will remain there all the remainder of the winter.

On the same date I took an adult female Northern Red-breasted Sapsucker (*Sphyrapicus ruber nootkensis*) that had the upper mandible two and a half inches long and curving far over to the right. She was very fat and experienced no difficulty whatever in securing her food as I watched her for some time. This she did by using her long upper mandible much as we do a nut pick, digging the insect life to the surface out of deep crevices in the bark, and then picking it up by turning her head completely over on one side.

January 22: Collected a fine adult male Nuttall Sparrow (*Zonotrichia leucophrys nuttalli*), which is my only record for this sparrow in winter.—J. H. BOWLES, Tacoma, Washington.

Some Birds of Ana Capa Island.—On the 4th of September, 1903, I was landed from a yacht onto Ana Capa Island, which lies east of Santa Cruz Island, California, and separated from it by about five miles of open ocean. Ana Capa is rapidly decreasing in size and one can easily foresee its complete dissolution at no very distant time. The action of the waves has already cut thru it at several points. My stay on the Island was limited to less than an hour; but besides that I was permitted to coast along nearly the whole length of the island in a small boat. There is but scanty vegetation on this Island. I saw a few insects, signs of mice (*Peromyscus*), and one species of lizard (*Uta*).

Besides the usual seabirds of the region I saw the following: One Bald Eagle (*Haliaeetus leucocephalus*) flying; one pair of Mexican Ravens (*Corvus corax sinuatus*); several Rock Wrens (*Salpinctes obsoletus*), these being noted on the highest declivities of the Island; several spotted Sandpipers (*Actitis macularia*) along the surf; several Wandering Tattlers (*Heteractitis incanus*) on partly submerged rocks; one flock of five or six Black Turnstones (*Arenaria melanocephala*); one pair, with three two-thirds grown young, of the Black Oystercatcher (*Hæmatopus bachmani*) on a point of rocks jutting into the surf; and one Belted Kingfisher (*Ceryle alcyon*) flying along the surf.—J. GRINNELL, Pasadena, California.

The Condor in the San Joaquin Valley.—In Part II of the Life History of the California Condor, published in the January-February, 1908, number of your magazine, the range of the California Condor (*Cynognypus californianus*) is given as being confined mainly to the southern California coast region. They were formerly not uncommon in the southern part of the San Joaquin Valley. During the years 1872 to 1879 I saw condors, or vultures, as they were usually called, soaring over the valley, then a vast range for cattle and sheep. Generally there were not more than two to be seen, but on one occasion I saw three or four. They were seen occasionally during all of the years mentioned. I never observed one with anything in its talons. In the summer of 1879 I saw three condors and about a dozen buzzards about the carcass of a dead sheep between Tule River and Deer Creek, in Tulare County. I drove by slowly at a distance of about fifty yards. The three condors and one buzzard were eating the carcass when I drew near and the other buzzards were a few paces back, as if waiting their turn. I have heard of the condor since in the southwestern part of the San Joaquin Valley, which is still a cattle and sheep range, and do not doubt that they are occasionally to be seen there, where carrion is abundant at certain seasons of the year.

In conversation with Orlando Barton, who has lived for several years in the northwestern part of Kern County, on the eastern slope of the Coast Range, he informed me that he has often seen the condor there. One large bird in particular he saw many times during a period of two years. He often saw it sitting on a large rock within sight of his house and on an abandoned oil derrick in Sunflower Valley. On one occasion he passed within about seventy yards of it when sitting on a boulder. It rose to its full length, and he estimated it to be four and a half feet high. He picked up a feather twenty-one and a fourth inches in length which fell from one of its wings. He saw it several times feeding on dead lambs. He has not seen this or any other condor since 1906.

In conversation recently with W. F. Dean, of Three Rivers, this (Tulare) county, he stated that several years ago, during a dry season, when there were many sheep dying, he saw eight or ten condors in one day in Yokol Valley, 15 to 20 miles east of Visalia. He did not see more than four together. He mentioned the killing of two condors by parties living in the foothills (Sierra Nevada) of Tulare county. He observed two or three of the large birds eating a dead sheep, and surrounded by buzzards at a respectful distance. Mr. Dean has seen no condors in the Sierra foothills for four or five years.—GEORGE W. STEWART, Visalia, California.

THE CONDOR

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of Western Ornithology

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EDITORIAL NOTES

The present issue of THE CONDOR contains but one illustration. This will please certain of our constituents who deplore the expenditure of our resources in cuts! But perhaps others of our readers will not be so well pleased. Provided our contributors supply us with good illustrations we propose to continue them as a feature of our magazine. The matter, therefore, rests with those who are in a position to supply the pictures.

Wanted—someone to compile the 10-year Index for THE CONDOR. Remuneration, all the honor and satisfaction attendant upon the completion of the undertaking. Anyone feeling equal to the task, by reason of available time and inclination, correspond with the Editor.

The leading article in *Cassinia* for 1907 is by Witmer Stone and narrates what has been learned in regard to the life and accomplishments of Adolphus L. Heermann, M. D. No one of the early field naturalists of California did more lasting work in ornithology than Heermann. His papers, appearing in the Journal of the Philadelphia Academy, and in Volume X of the Pacific Railroad Surveys, form our most reliable record of the ornis of the State at the period of his explorations, 1849 to 1854. It will pay every student of western birds to read Mr. Stone's biography of Heermann.

A new edition of Mrs. Bailey's Handbook of Birds of the Western United States is announced to appear early in the fall.

Messrs. Finley and Bohlman left Portland May 1 to make an ornithological tour of Eastern Oregon. They go by auto, having adapted a machine to the carrying of a camp outfit. Their object is, of course, primarily bird photography. CONDOR readers may look forward to seeing some of the results in future issues of our magazine.

The Birds of Washington, announced two years ago as having been undertaken by William Leon Dawson and J. H. Bowles, is reported to be well along towards completion. A lately incorporated feature, to be added to an "Imperial Edition, de grand Luxe", of the proposed work, will be 16 original water color paintings of Washington birds by Allan Brooks. The cost of this edition will be \$350.00 per copy. The work of Allan Brooks is said by those competent to judge to be unexcelled by that of any other bird artist in the world.

We have just received a letter from Mr. Robert Ridgway, dated "San Jose, Costa Rica, April 25, 1908." The following excerpts are of general interest: "The projected trip to the Cerro Turubales was abandoned, and we went instead to Guayabo, at the eastern base of the Volcan Turrialba, and thence to the lecheria at the foot of the cinder zone. Here we spent three miserable days on account of the cold and constant rain. From the lecheria we ascended to the crater, the climb requiring 3 hours and 10 minutes of very hard work; the descent was made in 2 hours. On the summit I found only one bird, *Junco vulcani*; but a little further down, in the chaparral, *Selasphorus flammula* and a *Thryorchilus* were noted. In holes of one of the cliffs of the crater a colony of *Hemiprocnex zonaris* were nesting, but how they managed to stand the sulphur fumes I cannot understand. We got no specimens of this bird because, in the first place, the cliff was on the opposite and inaccessible side of the pit, a quarter to half a mile distant; and in the second place, any specimens shot (if that had been possible) would have dropped at least 1000 feet into the abyss where, of course, it would have been the sheerest folly to attempt to go.

"We did fairly well at Guayabo, adding at least two species (and genera) to the Costa Rican list." Mr. Ridgway will shortly return to Washington where he will resume work on the *Birds of North and Middle America*.

The 1908 Alexander Expedition to southeastern Alaska left San Francisco May 18 to be gone until October. The collectors in the party are Miss Alexander, Mr. Joseph Dixon and Mr. Edmund Heller. As in 1907 the object of the explorations will be the collection of mammals and birds, and information concerning their habits and distribution. The material obtained will be deposited in the new museum at Berkeley.

The Museum of Vertebrate Zoology at the University of California was formally established March 23, 1907. As announced in the March issue of this magazine, this new institution has been founded thru the generosity of

Miss Annie M. Alexander, a friend of the University as well as of natural science. The purpose of the Museum is to carry on field and research work pertaining to the vertebrate fauna of the West Coast of North America. Several collectors are already in the field in the interests of the Museum. Besides the Alaskan party referred to above, Mr. Frank Stephens is at work in Eastern San Diego County; Messrs. Walter Taylor and Charles Richardson are collecting in the vicinity of San Gorgonio Pass; and Messrs. Harry Swarth and J. Grinnell are carrying on field work near Hemet, Riverside County.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The March meeting of the Northern Division of the Cooper Ornithological Club was held in the Oakland Chamber of Commerce, March 7, at 8 P. M., President D'Evelyn in the chair. The minutes of the last meeting were read and approved. The names of J. M. Davis, Alfred Brazier Howell, and W. M. Peterson were read and their election to membership in the club by the Southern Division was approved. The secretary was instructed to learn from the Southern Division as to whether Mr. Davis is a member of the Northern or Southern Division; his address being Eureka, California.

Mr. Emerson, as chairman of the committee on the Clifton resolution, reported that the committee had carried out the instructions of the chair and copies of the resolutions had been forwarded to the Southern Division and to Mr. Clifton.

Mr. Emerson reported that arrangements had been made with Mr. Stearns of the Oakland Chamber of Commerce whereby the Club could keep a register at the Chamber. Further arrangements will be made and reported at the next meeting.

Mr. Gifford proposed the name of J. G. Bliss, 3281 Briggs Avenue, Alameda, California, for membership. Mr. Emerson proposed the name of George J. Obermuller, Haywards, California. Subject to the final vote the names were held over until the next meeting.

Dr. D'Evelyn reported that it had reached his ears that members of the Cooper Club had been prosecuted for dealing commercially in birds and eggs and spoke condemning such acts on the part of any members of the Club. Mr. Emerson then introduced a copy of the accompanying resolutions which after discussion was passed by the Club.

Whereas, It has become known to the Club-at-Large that certain members have been carrying on a commercial trade in birds and eggs in violence to the state protection laws;

Resolved, That the object of this Club was and is for the study and advancement of ornithology only, and the sentiment of this organization does not sanction its members, dealing commercially in birds and eggs.

Resolved, That we the members here present do all that is within our means to uphold the bird-protection laws of California, in conjunction with the State Fish and Game Commissioners.

Resolved, That a copy of these resolutions be spread upon the records of this organization and that a copy be sent to the Southern Division, the State Fish and Game Commissioners of California, and the Audubon Society of said State.

The business of the evening being concluded Dr. D'Evelyn read a paper entitled "Notes on the Waltzing Instinct in Ostriches." Dr. D'Evelyn's personal knowledge of the habits of the ostrich in South Africa filled the paper with interest and it was very pleasing to members of the Club. A copy of the paper has been preserved in the records. Mr. Emerson then read a paper on "The Distribution of the Yellow Warbler." Mr. Emerson illustrated his talk with maps and the skins of warblers taken in various parts of its range. The remainder of the evening was taken up by general bird talk by the members present.

J. S. HUNTER, *Secretary.*

SOUTHERN DIVISION

MARCH.—The regular March meeting of the Southern Division convened at 8:30 P. M. on the 26th, in the City Clerk's Office, City Hall, Los Angeles. President Morcom occupied the chair, and J. Grinnell was elected Secretary *pro tem.* The following members were present: Judson, Miller, Jay brothers, Howard, Willett, Robertson, Linton, Chamberlin, Osborn, Leland, Grinnell and Morcom.

The minutes of the February meeting were read and approved. The name of Arthur Wilcox was proposed for membership, his application being signed by W. L. Chambers. Certain correspondence aenent the legality of exchanging and selling specimens of birds and eggs was read and discussed. Mr. Robertson made extended remarks finally suggesting that our Secretary write to the State Fish Commission and ask them to define exactly their attitude toward exchanging and selling. Professor Miller made the motion, seconded by Mr. Jay, that a committee be appointed by the Chair to draw up resolutions expressing the Club's attitude with regard to the State law and bird-collecting, the same to be presented at our next regular meeting. The motion was carried and the Chair appointed Messrs. Miller, Robertson and Grinnell as the committee in question.

A general discussion followed, dealing with a wide range of ornithological topics. Adjourned.

J. GRINNELL, *Secretary pro tem.*



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